GI360™; stool

Suggestions for your consideration.
As always, consult with
your health care professional.
With Love & Hope, Dr. Amy

DOCTOR'S DATA INC.

Order: 210618-0353
Client #: 38596
Regenerus Laboratories Ltd
Aero 14, Redhill Aerodome, Kings Mill Ln
Redhill Surrey, RH1 5YP
United Kingdom

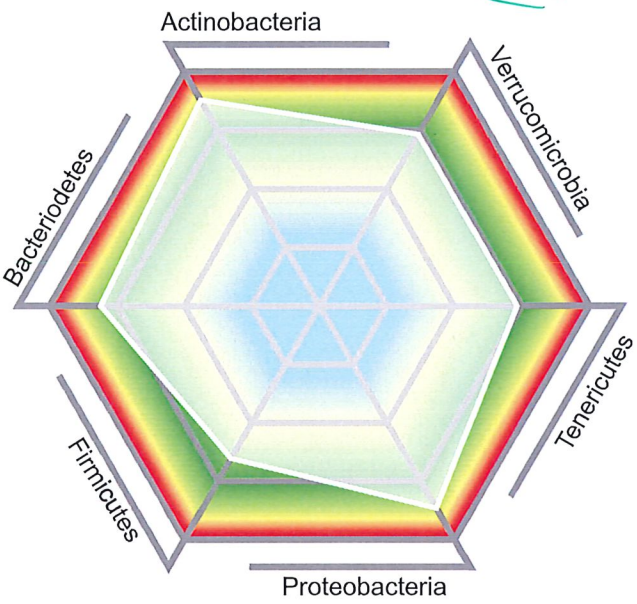
Patient: Alex Maclean
Id: P211690274
Age: 24 **DOB:** 09/19/1996
Sex: Male

DEFER to your OWN doctor as always

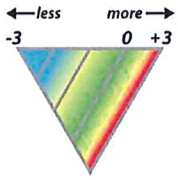
Sample Collection	Date/Time
Date Collected	06/13/2021
Date Received	06/18/2021
Date Reported	06/28/2021
Specimens Collected	3

Microbiome Abundance and Diversity Summary

The abundance and diversity of gastrointestinal bacteria provide an indication of gastrointestinal health, and gut microbial imbalances can contribute to dysbiosis and other chronic disease states. The GI360™ Microbiome Profile is a gut microbiota DNA analysis tool that identifies and characterizes more than 45 targeted analytes across six Phyla using PCR and compares the patient results to a characterized normobiotic reference population. The web chart illustrates the degree to which an individual's microbiome profile deviates from normobiosis.



LEGEND



The web image shows the relative diversity and balance among bacteria belonging to the six primary Phyla. The white shaded area represents the patient's results compared to a normobiotic reference population. The center of the web represents less abundance while the outer edges represent more than normobiotic.

Dysbiosis Index

The Dysbiosis Index the (DI) is calculated strictly from the results of the Microbiome Profile, with scores from 1 to 5. A DI score above 2 indicates dysbiosis; a microbiota profile that differs from the defined normobiotic reference population. The higher the DI above 2, the more the sample deviates from the normobiotic profile. The dysbiosis test and DI does not include consideration of dysbiotic and pathogenic bacteria, yeast, parasites and viruses that may be reported in subsequent sections of the GI360™ test.

Key Findings

+ LactoFerrin
+ Cilantro

Dialister invisus, Very High	↑	*Salmonella* spp., Detected
Dialister invisus & Megasphaera micronuciformis, Very High	↑	Secretory IgA, Low
Eubacterium hallii, Very Low	↓	
Faecalibacterium prausnitzii, Very Low	↓	
Lachnospiraceae, Very Low	↓	
Ruminococcus gnavus, Very High	↑	

Mega IgG 2000
+ T and B cell caps

Rotate from HH1 probiotic list

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Microbiome Bacterial Abundance;Multiplex PCR

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Pass to your doctor

LEGEND

-3	-2	-1	0	+1	+2	+3
Very Low		Low	Within Reference Interval	High	Very High	

Results are graphed as deviations from a normobiotic population. Normobiosis or a normobiotic state characterizes a composition of the microbiota profile in which microorganisms with potential health benefits predominate in abundance and diversity over potentially harmful ones.

Actinobacteria	Result	Reference Interval
Actinobacteria	+1	0
Actinomycetales	0	0
Bifidobacterium spp.	+1	0

Bacteriodetes	Result	Reference Interval
Alistipes spp.	0	0
Alistipes onderdonkii	+1	0
Bacteroides fragilis	0	0
Bacteroides spp. & *Prevotella* spp.	0	0
Bacteroides spp.	0	0
Bacteroides pectinophilus	-1	0
Bacteroides stercoris	+1	0
Bacteroides zoogleoformans	0	0
Parabacteroides johnsonii	0	0
Parabacteroides spp.	0	0

organic or cook with

Firmicutes	Result	Reference Interval
Firmicutes	0	0
Bacilli Class	-1	0
Catenibacterium mitsuokai	0	0

organic

Notes:
The gray-shaded area of the bar graph represents reference values outside the reporting limits for this test.
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Methodology: Multiplex PCR

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Microbiome Bacterial Abundance;Multiplex PCR

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Firmicutes	Result	Reference Interval
Clostridia Class	0	0
Clostridium methylpentosum	-1	0
Clostridium L2-50	0	0
Coprobacillus cateniformis	0	0
Dialister invisus	+2	0
Dialister invisus & Megasphaera micronuciformis	+2	0
Dorea spp.	0	0
Eubacterium biforme	0	0
Eubacterium hallii	-2	0
Eubacterium rectale	0	0
Eubacterium siraeum	0	0
Faecalibacterium prausnitzii	-2	0
Lachnospiraceae	-2	0
Lactobacillus ruminis & Pediococcus acidilactici	0	0
Lactobacillus spp.	0	0
Phascolarctobacterium spp.	+1	0
Ruminococcus albus & R. bromii	0	0
Ruminococcus gnavus	+2	0
Streptococcus agalactiae & Eubacterium rectale	-1	0
Streptococcus salivarius ssp. *thermophilus & S. sanguinis*	0	0

Useful

Refer to your doctor

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Firmicutes	Result	Reference Interval
Streptococcus salivarius ssp. *thermophilus*	0	0
Streptococcus spp.	0	0
Veillonella spp.	+1	0

Proteobacteria	Result	Reference Interval
Proteobacteria	+1	0
Enterobacteriaceae	0	0
Escherichia spp.	+1	0
Acinetobacter junii	0	0

Tenericutes	Result	Reference Interval
Mycoplasma hominis	0	0

Verrucomicrobia	Result	Reference Interval
Akkermansia muciniphila	0	0

Microbiome Abundance Information:

- The GI360™ Microbiome Profile is a focused gut microbiota DNA analysis tool that identifies more than 45 targeted analytes across six phyla using a CE-marked multiplex PCR system. Patient results are compared to a highly defined normobiotic reference population (n > 1,100). The white shadowed web plot within the hexagonal diagram illustrates the degree to which an individual's microbiome profile deviates from normobiosis. The center of the diagram represents less bacterial abundance while the outer edges represent greater than normobiosis. Deviation from a hexagon-shaped plot indicates variant diversity of the microbial community. Key findings for patient's microbiome profile are summarized in the table below the diagram, and detailed results for all of the analytes are presented on the next 3 pages of the report. Detailed results for the specific bacteria are reported as -3 to +3 standard deviations, as compared to the normobiotic reference population.

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GI Pathogens;Multiplex PCR

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Viruses	Result
Adenovirus F40/41	Negative
Norovirus GI/GII	Negative
Rotavirus A	Negative

Pathogenic Bacteria	Result
Campylobacter (*C. jejuni*, *C. coli* and *C. lari*)	Negative
Clostridioides difficile (Toxin A/B)	Negative
Escherichia coli O157	Negative
Enterotoxigenic *Escherichia coli* (ETEC) lt/st	Negative
Salmonella spp.	Positive
Shiga-like toxin-producing *Escherichia coli* (STEC) stx1/stx2	Negative
Shigella (*S. boydii*, *S. sonnei*, *S. flexneri* & *S. dysenteriae*)	Negative
Vibrio cholerae	Negative

Parasites	Result
Cryptosporidium (*C. parvum* and *C. hominis*)	Negative
Entamoeba histolytica	Negative
Giardia duodenalis (AKA *intestinalis* & *lamblia*)	Negative

Lactoferrin
+
eat cilantro is tolerated

Defer to your docto

Notes:
Methodology: Multiplex PCR

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Parasitology; Microscopy

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Protozoa	Result
Balantidium coli	Not Detected
Blastocystis spp.	Not Detected
Chilomastix mesnili	Not Detected
Dientamoeba fragilis	Not Detected
Endolimax nana	Not Detected
Entamoeba coli	Not Detected
Entamoeba hartmanni	Not Detected
Entamoeba histolytica/Entamoeba dispar	Not Detected
Entamoeba polecki	Not Detected
Enteromonas hominis	Not Detected
Giardia duodenalis	Not Detected
Iodamoeba bütschlii	Not Detected
Isospora belli	Not Detected
Pentatrichomonas hominis	Not Detected
Retortamonas intestinalis	Not Detected

Cestodes - Tapeworms	Result
Diphyllobothrium latum	Not Detected
Dipylidium caninum	Not Detected
Hymenolepis diminuta	Not Detected
Hymenolepis nana	Not Detected
Taenia	Not Detected

good

Trematodes - Flukes	Result
Clonorchis sinensis	Not Detected
Fasciola hepatica/Fasciolopsis buski	Not Detected
Heterophyes heterophyes	Not Detected
Paragonimus westermani	Not Detected

Nematodes - Roundworms	Result
Ascaris lumbricoides	Not Detected

Notes:
Methodology: Microscopy

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Parasitology; Microscopy

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Nematodes - Roundworms	Result
Capillaria hepatica	Not Detected
Capillaria philippinensis	Not Detected
Enterobius vermicularis	Not Detected
Hookworm	Not Detected
Strongyloides stercoralis	Not Detected
Trichuris trichiura	Not Detected

good

Other Markers	Result	Reference Interval
Yeast	Rare	Not Detected – Rare
RBC	Not Detected	Not Detected – Rare
WBC	Not Detected	Not Detected – Rare
Muscle fibers	Not Detected	Not Detected – Rare
Vegetable fibers	Rare	Not Detected – Few
Charcot-Leyden Crystals	Not Detected	Not Detected
Pollen	Not Detected	Not Detected

Macroscopic Appearance	Result	Reference Interval
Color	Brown	Brown
Consistency	Soft	Soft
Mucus	Negative	Negative

Parasitology Information:

- This test is not designed to detect *Cyclospora cayetanensis* or *Microsproridia* spp.
- Intestinal parasites are abnormal inhabitants of the gastrointestinal tract that have the potential to cause damage to their host. The presence of any parasite within the intestine generally confirms that the patient has acquired the organism through fecal-oral contamination. Damage to the host includes parasitic burden, migration, blockage and pressure. Immunologic inflammation, hypersensitivity reactions and cytotoxicity also play a large role in the morbidity of these diseases. The infective dose often relates to severity of the disease and repeat encounters can be additive.
- There are two main classes of intestinal parasites, they include protozoa and helminths. The protozoa typically have two stages; the trophozoite stage that is the metabolically active, invasive stage and the cyst stage, which is the vegetative inactive form resistant to unfavorable environmental conditions outside the human host. Helminths are large, multicellular organisms. Like protozoa, helminths can be either free-living or parasitic in nature. In their adult form, helminths cannot multiply in humans.

Notes:
Methodology: Microscopy, Macroscopic Observation

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Parasitology; Microscopy

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Parasitology Information:

- In general, acute manifestations of parasitic infection may involve diarrhea with or without mucus and or blood, fever, nausea, or abdominal pain. However these symptoms do not always occur. Consequently, parasitic infections may not be diagnosed or eradicated. If left untreated, chronic parasitic infections can cause damage to the intestinal lining and can be an unsuspected cause of illness and fatigue. Chronic parasitic infections can also be associated with increased intestinal permeability, irritable bowel syndrome, irregular bowel movements, malabsorption, gastritis or indigestion, skin disorders, joint pain, allergic reactions, and decreased immune function.
- In some instances, parasites may enter the circulation and travel to various organs causing severe organ diseases such as liver abscesses and cysticercosis. In addition, some larval migration can cause pneumonia and in rare cases hyper infection syndrome with large numbers of larvae being produced and found in every tissue of the body.
- **Red Blood Cells** (RBC) in the stool may be associated with a parasitic or bacterial infection, or an inflammatory bowel condition such as ulcerative colitis. Colorectal cancer, anal fistulas, and hemorrhoids should also be ruled out.
- **White Blood Cells** (WBC) and **Mucus** in the stool can occur with bacterial and parasitic infections, with mucosal irritation, and inflammatory bowel diseases such as Crohn's disease or ulcerative colitis
- **Muscle fibers** in the stool are an indicator of incomplete digestion. Bloating, flatulence, feelings of "fullness" may be associated with increase in muscle fibers.
- **Vegetable fibers** in the stool may be indicative of inadequate chewing, or eating "on the run".

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Microbiology

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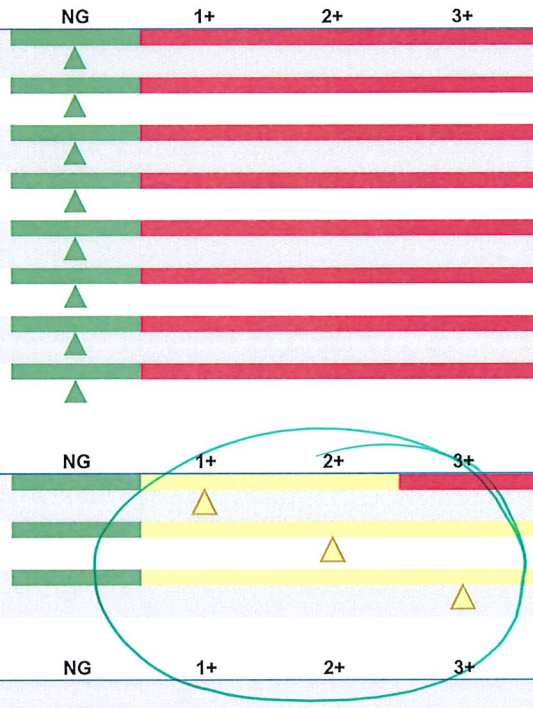
Pathogenic Bacteria	Result	NG	1+	2+	3+	4+	Reference Interval
Aeromonas spp.	NG						No Growth
Edwardsiella tarda	NG						No Growth
Plesiomonas shigelloides	NG						No Growth
Salmonella group	NG						No Growth
Shigella group	NG						No Growth
Vibrio cholerae	NG						No Growth
Vibrio spp.	NG						No Growth
Yersinia spp.	NG						No Growth

Imbalance Bacteria	Result	NG	1+	2+	3+	4+	Reference Interval
Klebsiella pneumoniae	1+						No Growth
Streptococcus parasanguinis	2+						No Growth
Streptococcus salivarius/vestibularis	3+						No Growth

Yeast	Result	NG	1+	2+	3+	4+	Reference Interval
No yeast isolated	NG						



Microbiology Information:

- **Pathogenic bacteria** consist of known pathogenic bacteria that can cause disease in the GI tract. They are present due to the consumption of contaminated food or water, exposure to animals, fish, or amphibians known to harbor the organism. These organisms can be detected by either Multiplex PCR or microbiology culture.
- **Imbalanced bacteria** are usually neither pathogenic nor beneficial to the host GI tract. Imbalances can occur when there are insufficient levels of beneficial bacteria and increased levels of commensal bacteria. Certain commensal bacteria are reported as dysbiotic at higher levels.
- **Yeast** may normally be present in small quantities on the skin, in the mouth and intestine. While small quantities of yeast may be normal, yeast observed in higher quantities is considered abnormal.

Defer to your OWN doctor on all suggestions

Juniper + xylitol + uva ursi & GSE

Notes:
NG = No Growth
Methodology: Culture and identification by MALDI-TOF and conventional biochemicals

MALDI-TOF

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Stool Chemistries

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Digestion / Absorption	Result	Unit	Reference Interval
Elastase	218	µg/mL	> 200
Fat Stain	None		None – Few
Carbohydrates†	Negative		Negative

Inflammation	Result	Unit	Reference Interval
Lactoferrin	1.1	µg/mL	< 7.3
Lysozyme*	276	ng/mL	≤ 500
Calprotectin	<5	µg/g	≤ 50

Immunology	Result	Unit	Reference Interval
Secretory IgA*	22.5	mg/dL	30 – 275

Short Chain Fatty Acids	Result	Unit	Reference Interval
% Acetate‡	63	%	50 – 72
% Propionate‡	20	%	11 – 25
% Butyrate‡	16	%	11 – 32
% Valerate‡	1.9	%	0.8 – 5.0
Butyrate‡	2.3	mg/mL	0.8 – 4.0
Total SCFA's‡	15	mg/mL	5.0 – 16.0

+ SDE

Intestinal Health Markers	Result	Unit	Reference Interval
pH	6.0		5.8 – 7.0
β-glucuronidase*	583	U/L	100 – 1200
Occult Blood	Negative		Negative

Chemistry Information:

Defer to your own doctor

- **Elastase** findings can be used for the diagnosis or the exclusion of exocrine pancreatic insufficiency. Correlations between low levels and chronic pancreatitis and cancer have been reported.

Notes:
RI= Reference Interval, L (blue)= Low (below RI), WRI (green)= within RI, Yellow= moderately outside RI, L or H, H (red)= High (above RI)
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†This test has been modified from the manufacturer's instructions and its performance characteristics determined by Doctor's Data Laboratories in a manner consistent with CLIA requirements.
‡This test was developed and its performance characteristics determined by Doctor's Data Laboratories in a manner consistent with CLIA requirements. The U.S. Food and Drug Administration (FDA) has not approved or cleared this test; however, FDA clearance is not currently required for clinical use.
Methodology: Elisa, Microscopy, Colormetric, Gas Chromotography, ph Electrode, Guaiac

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